

Region 1 FY 2013 Invasive Species Control Program Proposal Format

Refuge/complex name: Hakalau Forest National Wildlife Refuge.

Project title: Control of English Holly.

Total amount requested: \$35,724

Project description: Hakalau Forest NWR (Hakalau) was established to conserve endangered forest birds and their habitats. Since establishment of the refuge there has been significant progress in forest restoration leading to increasing populations of native forest birds. However, these gains are threatened by invasion of exotic plants, animals and disease. English holly (*Ilex aquafolia*) was identified as a highest priority target invasive plant species in Hakalau Forest NWR's 2010 Comprehensive Conservation Plan (CCP). It is a tall shrub or small tree that can spread via seeds or vegetatively and can out-compete native species. Holly was originally planted around ranch buildings located in this area prior to establishment of the refuge. This is one of few places where English holly is found in Hawaii, so eradication here is crucial not only for the refuge, but for other native ecosystems in the state.

Comment [BFW1]: I honestly can't imagine it spreading, particularly considering it was deliberately planted there.

Distinct project with well-defined objectives (10 points): In FY12, we received an Invasive Species Management with Volunteers (IDMV) grant (\$9,000) for control of English Holly. Using these funds we organized 4 holly removal expeditions, with 45 volunteers supplying 256 hours of effort. We plan to continue volunteer holly removal trips using the equipment purchased with the IDMV grant and control efforts are on-going with seasonal volunteers and contractors. However, we now realize these efforts will not be sufficient for eradication of this species. We found English holly to be more widespread and abundant than previously thought. Additionally, we found that previous efforts by contractors, EZ-ject herbicide treatment of larger holly trees, were not wholly effective. Many of these trees are re-growing or have generated root sprouts. Also since contractors did not target seedlings, young trees are abundant. Thus far with IDMV funds, we have been able to remove holly on <35 acres. We propose to expand on previous attempts to control this invasive plant, with a goal of complete eradication on the refuge.

Comment [BFW2]: Good, but when will eradication be achieved?

Potential for maximum control (10 points): English holly is currently limited to approximately 500 acres in the southwest portion of the refuge, but spreading. We seek funding to build on the efforts started with the IDMV grant and with U.S. Forest Service Forest Health Protection (FHP) funds. We recently were informed that we will get FHP funds in FY13, primarily for Florida blackberry control and limited holly control. Currently English holly control is conducted by contractors only when conditions are not favorable for spraying blackberry. With ISCP funds we will add hours to the FHP funded contract to expand holly control efforts. Under the proposed modified contract we will modify methods to be more effective: cutting large trees and treating stumps with herbicide along with mechanical removal of seedlings and smaller trees.

Comment [BFW3]: Methods are down pat, but how many acres do you think can be controlled?

Biological benefit to priority species or BIDEH (10 points): Hakalau Forest NWR was created for the protection and conservation of endangered forest birds and their habitats. The refuge supports a diversity of native plants and birds, including 27 which are listed under the Endangered Species Act. Management actions thus far have led to stable or increasing

Comment [BFW4]: Even so, I'm not getting a strong sense of a direct tie between English holly and listed species. It seems valuable, but not urgent.

populations of most forest bird species, documented in annual forest bird surveys. Hakalau is one of the few places in Hawaii where native forest bird populations are increasing. This is the result of improvements in forest habitats and expansion of native and endangered plant species. Proliferation of alien plant species, such as English holly, can have detrimental effects on these restoration efforts as these plants out-compete beneficial native species. Endangered plant and animal species, as well as other native Hawaiian species, depended on a healthy, native forest. Removal of English holly, in conjunction with on-going management of other invasive plant and animal species will help ensure the gains made thus far are not lost.

Utilizes the principles of Integrated Pest Management (5 points): Control and monitoring of English holly is accomplished through Integrated Pest Management (IPM) techniques, including mechanical and chemical methods. We monitor the distribution and abundance of invasive plant species during annual weed and ungulate activity surveys, conducted along transects throughout the fenced areas of the refuge. Within the area of holly occurrence, young holly plants will be mechanically removed. Large plants will be cut and a basal treatment of herbicide will be applied to the remaining stumps. Chemical control will be implemented in accordance with the approved refuge Pesticide Use Proposals (PUPs).

Monitoring to document and evaluate project success (5 points): The current distribution of holly has been determined and mapped using data from annual weed surveys and more intensive surveys targeting holly. Contractors will track treatment areas using a GPS to ensure 100% coverage. Post-treatment monitoring will be achieved through the annual weed surveys and more intensive surveys focusing on the relatively small area where holly occurs.

Comment [BFW5]: What is it? It is within 500 acres, but how many acres are holly?

Comment [BFW6]: Does this mean eradication or 100% treatment this year?

Involves matching funds (not required) or in-kind support from partners (5 points): We expect to receive ~\$90,000 in FY13 from the U.S. Forest Service for invasive plant species control. Most of these funds will be used blackberry control, but a portion will be dedicated to holly control. Multiple partners provide personnel to assist with the Hakalau Forest NWR weed and ungulate surveys, including USGS, local watershed partnerships (Mauna Kea Watershed Partnership and Three Mountain Alliance) and State of Hawaii resource management agencies. A portion of a 3 year, \$25,000/year SSP grant is also being used to support the weed monitoring efforts at the Hakalau Forest Unit of the refuge.

Budget:

Budget item	ISCP funds	USFS FHP funds	USFWS match
Contract for alien plant control (~600 hours @ \$54.50/hr)	\$32,700	\$90,000	Staff time for oversight and post-treatment monitoring (biologist and operations manager) Housing for contractors
Herbicide (20 gal @ \$95/gal)	\$1,900		
Surfactant (2 gal @ \$172/gal)	\$344		
Dye marker (20 gal @ \$39/gal)	\$780		
TOTAL:	\$35,724	\$90,000	